



NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

MBA PROFESSIONAL REPORT

**Cost Avoidance Analysis, Safe Schools Environment Program
City of Salinas, California**

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December 2003

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SAFE SCHOOLS ENVIRONMENT PROGRAM
CITY OF SALINAS, CALIFORNIA**

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CITY OF SALINAS, CALIFORNIA**

ABSTRACT

There are six support programs provided to the Salinas, California K-12 School System under the Safe Schools/Healthy Students Initiative. The goal of this project is to develop quantitative estimates of the cost and the corresponding cost avoidance associated with element one – Safe Schools Environment. The Safe Schools Environment element consisted of two programs: Probation Officer and School Resource Officer. A cost avoidance analysis was conducted in order to assist the Safe Schools/Healthy Student Director in evaluation of the programs effectiveness and provide a foundation to pursue further federal funding. This project revealed that these two programs were cost effective and provided a positive impact to the Salinas community. Moreover, this project provided data that these two programs provided a significant return on investment for the taxpayer and warrant continued federal funding.

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EXECUTIVE SUMMARY

The purpose of this project is to identify the relative cost and benefit of two federally funded crime prevention and safety programs in Salinas, California, the School Resource Officer and School Attendance Enforcement Programs. The School Resource Officer program was managed by the City of Salinas Police Department and the School Attendance Enforcement Program was managed by the Monterey County Probation Department. These programs were funded from July 2000 to June 2003 and comprise the Safe Schools Environment element of the Safe Schools/Healthy Students Initiative established by Congress in 1999.

Methodology:

Cost data was compiled from the electronic and paper records located at the Safe Schools/Healthy Students Program Director's office in Salinas. Total expenditures for the three years of the program were \$511,487 for the School Resource Officer program and \$467,859 for the School Attendance Enhancement Program. Using this actual cost data as a foundation, estimates of the costs to sustain each program for an additional six years were calculated.

The methodology used to measure the costs avoided by these two programs was based on a model introduced by Mark A. Cohen in 1998. Cohen established a basis for measuring the cost of social programs against the benefits of saving high-risk youth from dropping out of school, becoming career criminals, and becoming heavy drug users.

Findings/Conclusions:

If the School Resource Officer and School Attendance Enforcement Programs can influence a sufficient number of youths to prevent them from falling into a life of crime, drug use or dropping out of school, then the programs will pay for themselves. In the analysis, conservative estimates are used, in lieu of more liberal estimates, to provide for a more realistic and reasonable approach in the calculation of the results. Therefore, our results concluded that in order for the School Resource Officer program to pay for a six-year sustainment cost of \$5 million in 2003 dollars, the program must save at least 3.33

youths from a life of crime, 11.80 youths from becoming heavy drug users or some combination of the two. For the School Attendance Enforcement Program to pay for a six-year sustainment cost of \$1.2 million in 2003 dollars, the program must save at least 4.32 youths from dropping out of school.

I. SAFE SCHOOLS/HEALTHY STUDENTS INITIATIVE

A. INTRODUCTION

This project was initiated to measure the economic value of two federally funded crime prevention and safety programs in Salinas, California under the Safe Schools/Healthy Student Initiative (SS/HS). As with many programs that target social ailments, the costs were readily available and were tracked and compiled with little complication. In contrast, the benefits were difficult to quantify -- even when some of the benefits were apparent.

A major hurdle to measuring the benefits of an initiative such as SS/HS is the time lag between the outlay of dollars and the anticipated results. Programs that are designed to benefit children are often expected to pay dividends long into adulthood. As a result, the data most sought was not available. Program supervisors tracked information relevant to their department; however, the time lag between program intervention and actual results was not quantifiable. Moreover, this led to the corresponding lack of quantitative benefits of the SS/HS of social programs.

B. SAFE SCHOOLS/HEALTH STUDENTS PROGRAM BACKGROUND

The SS/HS Initiative is a federally funded program that began in 1999. Advocates characterized its introduction as an unprecedented violence prevention program that involved a unique interagency partnership between elements of the Department of Education, the Department of Health and Human Services, and the Department of Justice. From June 2000 to July 2003, the SS/HS Initiative provided \$8.3 million to the City of Salinas, California to support six specific SS/HS elements – Safe Schools Environment (SSE), Alcohol, Drug, and Violence Intervention, School and Community Mental Health Services, Early Childhood Development Services, Education Reform, and Safe Schools Policies – servicing fourteen schools. Figure 1 shows a diagram of the six elements and thirteen programs and Figure 2 depicts the fourteen Salinas Schools blanketed by the programs. This research will focus on Element I, SSE.

SS/HS Elements and Programs

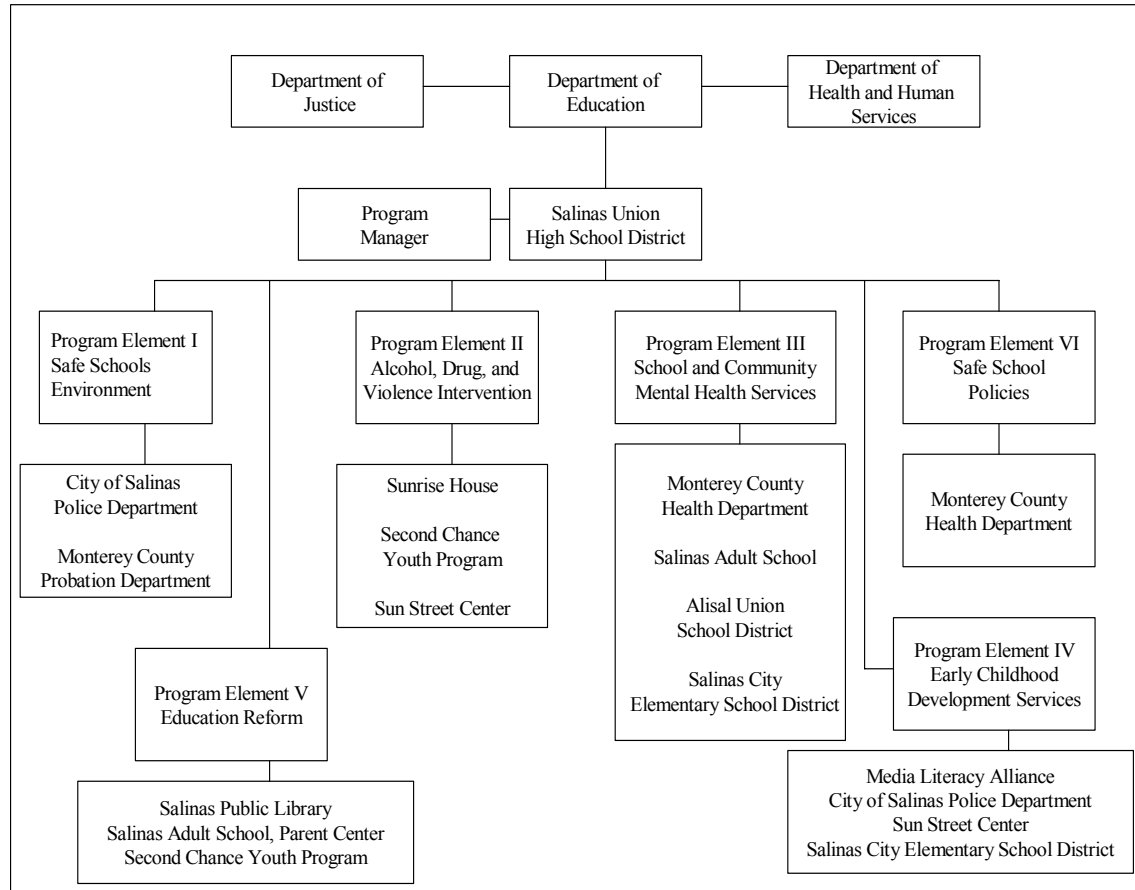


Figure 1: SS/HS Elements and Programs

Safe Schools/Healthy Students Safe School Environment	
<p>Santa Rita Union School District</p> <ul style="list-style-type: none"> • Galivan Middle School 	<p>Salinas Union High School District</p> <ul style="list-style-type: none"> • El Sausal Middle School • Harden Middle School • La Paz Middle School • Washington Middle School
<p>Salinas City Elementary School District</p> <ul style="list-style-type: none"> • Los Padres Elementary School • Sherwood Elementary School 	
<p>Alisal Union School District</p> <ul style="list-style-type: none"> • Alisal Community Elementary School • Dr. Martin Luther King Elementary School • Jesse Sanchez Elementary School 	<p>Salinas Union High School District</p> <ul style="list-style-type: none"> • Alisal High School • Everett Alvarez High School • North Salinas High School • Salinas High School

Figure 2: SS/HS SSE Schools

C. SAFE SCHOOLS ENVIRONMENT BACKGROUND

The SS/HS Initiative brought truancy abatement and school resource officer efforts together under one umbrella – Element I, SSE. The SSE is the focus of this analysis and is composed of two programs – School Resource Officer (SRO) Program, conducted by the City of Salinas Police Department and School Attendance Enhancement Program (SAEP), facilitated by the Monterey County Probation Department.

SS/HS advocates in Salinas expected the programs to make a measurable impact on crime and disorder problems; improve quality of life for students, teachers, school personnel and parents; and decrease fear of crime and violence among students, school employees and community members (Safe Schools/Healthy Students, Salinas, California/School Safety, 2003). Overall, the facilitators of the program, Gray, Shields and Lambert¹, reported unequivocally that their efforts have made a measurable impact

¹ Sergeant Victoria Gray, SRO Program Supervisor, City of Salinas Police Department; Lieutenant Gerry Lambert, City of Salinas Police Department; Denise Shields, Probation Service Manager, SAEP, County of Monterey Probation Department.

on crime, an increased feeling of safety, and a decreased fear of crime and violence within the target schools (2003).

The SRO program was established in the City of Salinas in 1978 and consisted of two full-time police officers (Ortega, 2001). At that time the program was mainly an avenue to foster trust and understanding between the police and students at middle schools and high schools. The officers wore plain clothes and visited district schools periodically as part of the City of Salinas Police Department's Community Oriented Policing (COP) initiative (Ortega, 2001). As the threat of violence increased and the presence of drugs and gang related incidents became more prevalent, the number of police officers increased and the mission of the SRO program evolved. With the help of the SS/HS grant, the SRO program underwent its most recent expansion with the funding of one additional police officer in 2000 and three additional police officers in 2003 (Gray, 2003). Unfortunately, these officers were re-assigned when SS/HS funding ended in June 2003. The SRO program has had as many as ten police officers and one supervisor assigned at one time. According to Lieutenant Lambert of the Salinas Police Department, the program is currently staffed with six police officers and one supervisor, but is optimally staffed with eight police officers and one supervisor (Lambert, 2003).

The SAEP program was established in 2000 with funding from the SS/HS initiative. The SAEP program is led by a probation supervisor at the Monterey County Probation Department (MCPD) with cooperation of the officials at the local school districts. The program involved assigning probation officers to specific elementary and middle schools to provide intervention and counseling for chronically truant students and working with their parents to resolve truancy issues. The literature provides evidence that truancy is a prime risk factor and a significant predictor of future delinquency among school-age children (e.g., Garry, 1996; Loeber et al., 2003). The SAEP program's fundamental purpose is to reduce truancy rates in designated elementary and middle schools. The SS/HS grant which funded three probation officers ended in June 2003.

Even though their designated missions are different, these two programs work toward a similar goal. The SRO program focuses on keeping children safe and in school by developing student and police relations, preventing school and gang violence, and

curbing property damage and crime. Similarly, the SAEF program focuses on identifying chronically truant at risk youths, and works to keep them safe and in school. The programs seek to keep kids safe, in school, and away from the patterns that lead to more serious juvenile behaviors that have life long social and economic implications.

The next section will detail the cost methodology; the actual costs of the program and the projected sustainment budgets.

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II. SAFE SCHOOLS ELEMENT PROGRAM COSTS

A. INTRODUCTION

This section addresses the methodology used to collect and analyze the expenditure data for the SAEP and SRO programs and describes the funding categories used to present the cost data. Additionally, we will introduce and give specific detail on the SAEP and SRO program expenditures and present proposed budgets to sustain the programs.

B. METHODOLOGY

This section addresses the methodology used to gather and present the cost data of the SAEP and SRO programs. It concludes with a description of the funding categories used to present the cost data.

The expenditure data was obtained from an electronic database and the financial records held at the SS/HS Program Director's office and with further assistance from the SAEP and SRO truancy abatement program supervisors in Salinas. The data was collected for the target years of the grant, the time period between 1 July 2000 and 30 June 2003.

To properly forecast continuation or sustainment budgets and to remain consistent with the total cost methodology, the total costs of the program were considered to include: the costs covered by other funding sources, the cost of capital equipment to initiate, sustain or expand the programs, and other miscellaneous cost considerations. The only funding source found other than the SS/HS grant was a grant from the School Community Policing Partnership Program (SCPP) (School Community Policing Partnership Program Annual Report, 2002). The SCPP grant was specified for the SRO program to offset the salary and benefits of one police officer who was initially funded by the SS/HS grant.

The expenditure data was compiled, analyzed, and categorized to capture the main types of expenditures and to show where the funds were expended. The categories are listed as follows: salaries and fringe benefits, supplies and equipment, travel and training, and other. The *other* category consists of the following cost categories: vehicle

lease costs, vehicle maintenance and fuel costs, computer support costs, bicycle maintenance costs, and telephone hardware and service costs.

C. SCHOOL ATTENDANCE ENHANCEMENT EXPENDITURES

1. SAEP Expenditures Analysis

This section introduces our analysis of SAEP expenditures. We begin with a discussion of the major expenditures of the SAEP program and show the total cost to the SS/HS program between July 2000 and June 2003. We conclude with a proposed budget to reinstate the SAEP program over the next six years.

The total cost of initiating the SAEP program by the SS/HS grant was \$467,859. Table 1 shows the expenditure breakdown by major category. The majority of these funds were expended for the salaries and fringe benefits of the probation officers hired for the expansion. The second largest expenditure category is classified as the *other* category and totaled \$27,300. The biggest cost driver of the *other* category is the vehicle lease costs for SAEP program vehicles. Each leased vehicle cost the program approximately \$187 per month when a vehicle was used at least one day of that month. If a vehicle was not used, the probation department was not obligated to pay for either the lease or the maintenance cost. The total lease expenditure for the three program years was \$11,455. Fuel and maintenance costs were the second largest portion of the *other* category and totaled \$7,187. The remaining, \$8,658, was comprised of land and cellular phone charges, as well as data processing support. Approximately \$7,000 of the supplies and equipment category was for computer hardware and software in support of the three probation officers, \$4,200 was for safety equipment, and \$3,165 was for general office supplies and educational literature for students and parents.

SAEP Expenses	FY 00-01	FY 01-02	FY 02-03	Total
Salary & Benefits	35,296	196,428	189,186	420,910
Training	0	5,254	30	5,284
Supplies & Equipment	3,944	9,720	701	14,365
Other	417	15,032	11,851	27,300
Total expenses per year	\$39,657	\$226,434	\$201,768	\$467,859

Table 1: (SAEP Expenses, Source: SS/HS expenditure records FY 00-03)

2. Proposed SAEP Budget

By analyzing the cost data for the SAEP program and through discussions with the SAEP program director, we were able to estimate the cost to reinstate the SAEP program for a period of six years. The forecast is based on the cost to support three probation officers and totals \$764,843. Table 2 below details the proposed budget.

Proposed SAEP Budget	FY04-05	FY05-06	FY 06-07	FY07-08	FY08-09	FY09-10
Salary (3 officers)	138,057	144,960	152,208	159,818	167,809	176,200
Benefits	46,019	48,320	50,736	53,273	55,936	58,733
Less Title IV-E Offset	<u>(92,038)</u>	<u>(96,640)</u>	<u>(101,472)</u>	<u>(106,545)</u>	<u>(111,873)</u>	<u>(117,466)</u>
Total Salary & Benefits	92,038	96,640	101,472	106,546	111,873	117,467
Travel/Training	3,000	3,095	3,193	3,294	3,399	3,507
Equipment	1,500	1,548	1,597	1,647	1,699	1,753
Office Supplies	1,500	1,548	1,597	1,647	1,699	1,753
Other						
Phones	1,920	1,981	2,044	2,108	2,175	2,244
Vehicle Maint. & Fuel	2,900	2,992	3,087	3,185	3,286	3,390
Computer Support	4,068	4,197	4,330	4,467	4,609	4,755
Vehicle Leases	<u>6,480</u>	<u>6,685</u>	<u>6,897</u>	<u>7,116</u>	<u>7,342</u>	<u>7,574</u>
Total Other	15,368	15,855	16,358	16,876	17,411	17,963
Cost of SAEP Program	113,406	118,685	124,216	130,011	136,082	142,443

Table 2: (Proposed SAEP Budget)

An assumption underlying this proposed budget is that a federal Title IV-E grant (“Probation Title IV-E/TANF Guidebook,” 1998) will be available to offset the salaries and fringe benefits costs. Title IV-E funding is authorized under the federal Social Security Act and provides federal funding to offset salaries and fringe benefits of foster care and adoption programs, under which the SAEP program is classified. This entitlement requires that state or local governments cover 50 percent of the total salary and fringe benefits with the Title IV grant matching with the additional 50 percent.

Probation officer salary estimates reflect adjustments for step promotions and a 5 percent annual salary increase. Fringe benefits are calculated at 25 percent of the total salary costs. The six-year salary and benefit costs, for three probation officers, are estimated at \$1,252,070. The Title IV-E offset will be \$626,035. Training costs include training and reference books for the three probation officers and include the cost of SAEP program literature. Supplies, equipment, and phone cost estimates were generated by the probation department and based upon historical cost data. Vehicle fuel and maintenance cost estimates were derived from SS/HS program historical cost data and total \$967 per vehicle per year for FY 04-05 and total \$18,840 for the six years. All of these costs, with the exception of salaries and fringe benefits, are increased by 3.17 percent annually for inflation (U.S. Department of Labor, Bureau of Labor and Statistics, CPI index average (1982-2002)).

D. SCHOOL RESOURCE OFFICER PROGRAM EXPENDITURES

1. SRO Expenditure Analysis

This section introduces our analysis of SRO expenditures. We begin with a discussion of the major expenditures of the SRO program and show the total cost to the SS/HS Initiative between July 2000 and June 2003. We conclude with a proposed budget to sustain the SRO program over the next six years.

The total cost of the SRO expansion was \$511,487. Table 3 details the expenditure breakdown by major category. Salaries and fringe benefits comprise \$336,613 or 66 percent of the expenditures. Of the salaries and fringe benefits, the SS/HS grant covered \$231,181 and the SSCP grant covered \$105,432.

The second largest expenditure category is the *other* category and totals \$138,261. The largest expenditure of this category was for the lease of four SRO program vehicles. The vehicles were paid for on a lease/buy program with the final payment being made in March 2001. Lease payments for all four vehicles were approximately \$5,395 per month with a lease term of twenty-four months. At the end of the lease term, the vehicles were purchased for one dollar each. The program vehicles are now owned by the Salinas Police Department and are used exclusively for the SRO program. The total vehicle maintenance and fuel costs were provided by the Salinas Police Department motor pool. The costs totaled \$6,839 and covered the time period between March 2001 and June 2003. The average cost was \$760 per vehicle per year. Also included in the *other* category were the service fees for the SRO's Nextel phones. The expense was approximately \$50 per officer per month.

Training and travel expenses of \$27,016 were primarily for officer attendance at two National Association of School Resource Officers (NASRO) conferences. The remaining balance of the travel and training costs, \$2,868, covered costs for local travel expenses including mileage reimbursement. Lastly, the supplies and equipment category cost of \$6,729 reflects the purchase of general office supplies and equipment.

SRO Expenses	FY 00-01	FY 01-02	FY 02-03	Total
Salary & Benefits	1,621	82,064	252,928	336,613
Travel & Training	2,868	16,393	10,623	29,884
Supplies & Equipment	4,119	741	1,869	6,729
Other	6,305	62,981	68,975	138,261
Total cost	14,913	162,179	334,395	511,487

Table 3: (SRO Expenses, Source: SS/HS expenditure records FY 00-03)

2. Proposed SRO Budget

By using historical data and information documented through discussions with the SRO program supervisor and the SRO accounting office, we estimate that it will cost approximately \$5,453,066 to sustain the entire SRO program for a period of six years. This estimate includes salaries, benefits, and support costs for eight School Resource Officers. This amount assumes that no other grants are available to offset program costs. The details of this estimate for six years are outlined in Table 4.

Proposed SRO Budget	FY 04-05	FY 05-06	FY 06-07	FY 07-08	FY 08-09	FY 09-10
Salary (8 officers)	567,024	607,410	650,673	697,017	746,662	799,843
Benefits	<u>175,324</u>	<u>187,811</u>	<u>201,188</u>	<u>215,518</u>	<u>230,868</u>	<u>247,312</u>
Total Salary & Benefits	742,348	795,222	851,861	912,535	977,531	1,047,155
Travel/Training	3,612	3,727	3,845	3,967	4,092	4,222
Supplies/Equipment	2,288	2,361	2,435	2,513	2,592	2,674
Other						
Phones	4,800	4,952	5,109	5,271	5,438	5,611
Vehicle Maint.& Fuel	8,360	8,625	8,898	9,181	9,472	9,772
Bicycle Maint.	<u>400</u>	<u>413</u>	<u>426</u>	<u>439</u>	<u>453</u>	<u>468</u>
Total Other	13,560	13,990	14,433	14,891	15,363	15,850
Total	761,808	815,299	872,575	933,905	999,578	1,069,901

Table 4: (Proposed SRO Budget)

Salaries costs reflect a 3.5 percent increase every six months and fringe benefits were estimated to be 30.92 percent of the total salaries. Travel and training costs reflect the expected cost of sending officers to the annual NASRO conference. Supply and equipment estimates were based on the average cost from the three SS/HS program years. Phone cost estimates were taken from year one and remain unchanged -- they are \$50 per month per phone. Vehicle maintenance and fuel costs were calculated from historical data and are estimated to be \$784 per vehicle per year for FY 04-05 and total \$54,308 for the six years. Based on an interview with the SRO program supervisor, annual bicycle maintenance is estimated to be \$50 per bike per year. All of these costs, with the exception of salaries and fringe, were increase by 3.17 percent to account for inflation. The following sections present research on cost-avoidance measures for the SRO and SAEP programs.

III. EFFECTIVENESS OF SSE PROGRAM

A. INTRODUCTION

Before evaluating the cost avoidance of the SSE program, it would be beneficial to examine its performance. To do this, we evaluated SAEP data provided by the Monterey County Probation Department and summarized a study conducted on SRO program effectiveness in the Salinas Union High School District. The SRO study was a survey conducted by Research Triangle Institute in collaboration with RMC Research Corporation. Both are briefly summarized below.

B. SAFE SCHOOLS ENVIRONMENT PROGRAM EFFECTIVENESS

The Monterey County Probation Department recently submitted a synopsis of findings to the California State Truancy Abatement Department for academic year 02/03. The synopsis compared a non-mediated group of youths to a mediated group of youths. The non-mediated group consisted of youths that were referred to the SAEP for chronic truancy, but had not been counseled. The mediated group had been referred and counseled. The data indicated that overall improvements in behavior were realized. Overall, youths that were mediated by the SAEP showed 45.1 percent improvement in attendance as compared to 29.5 percent for unmediated youths. When measured over a twelve-month period, attendance improved 26.6 percent for the mediated group as compared to an increase of 7.7 percent for the non-mediated group. Arrest rates for the mediated group dropped by 100 percent as compared to 27.5 percent for the non-mediated group. Only 12.5 percent of the mediated group was cited for probation violation as compared to 20 percent of the non-mediated group. The synopsis data indicates that the SAEP program was effective in reducing truancy. These findings were echoed by an independent study conducted at one of the Salinas elementary schools by the Public Health Institute that concluded that the SAEP program was very effective in reducing truancy and tardiness (Wiley and Shirk, 2001).

The surveys conducted by the Research Triangle Institute in 2001 and 2002 compared random samples from seventh, ninth and eleventh grade students within the

Salinas Union High School District. The surveys evaluated the students' feelings on school safety in relation to the first and second year of the SRO program. The survey results indicate that the students' overall feelings of safety increased as the SRO program progressed. The graph and text below give a summary of the survey findings for the following question: "Does having an SRO at your school change how safe you feel at school?"

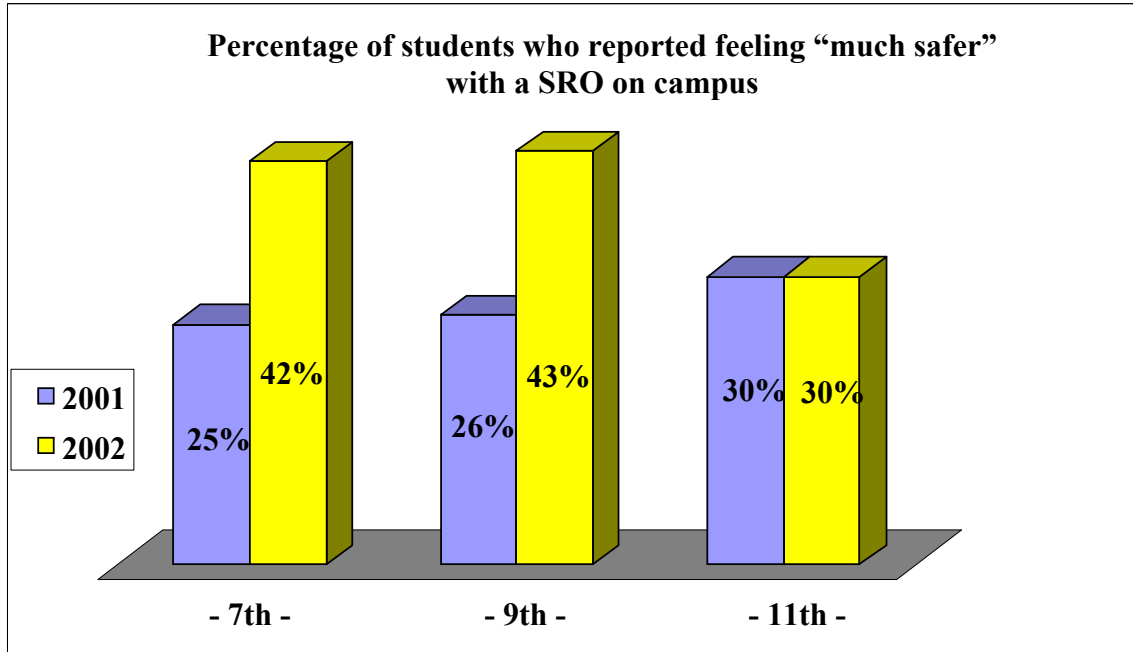


Figure 3: Percent of students who reported feeling "much safer" with a SRO on campus.

- In 2001, 465 out of 1,879 seventh graders or 25 percent reported that they felt much safer with a SRO on campus. The number doubled in 2002 with 914 out of 2,164 or 42 percent of seventh graders feeling much safer.
- Ninth graders reported similar findings as the seventh graders. In 2001, 201 out of 757 or 26 percent of ninth graders reported feeling much safer and 293 out of 685 or 43 percent of students reported feeling much safer in 2002 with a SRO on campus.
- Unlike the seventh and ninth graders, the eleventh grader's reported feelings were unchanged between years. In 2001, 210 out 708 or 30

percent of eleventh graders reported feeling much safer, while 222 out of 748 or 30 percent reported feeling much safer in 2002.

The students polled indicated that having an SRO on campus does provide an increased sense of security. The results of this study are further supported by findings from the Department of Criminal Justice Services' Crime Prevention Center. The Center reported that "78 percent of students and 85 percent of school staff nationwide report feeling either 'somewhat safe' or 'very safe' at school" with an active SRO program (Department of Criminal Justice Services, 2000, p. iii). More significantly, all of the SRO officers interviewed in Salinas expressed that a major effect of their program is making kids feel safe. School Resource Officer Gregory Rivera stated, "By providing a presence on campus, kids feel safe and will focus on the positive things around them" (Rivera, 2003).

Although the research presented above gives evidence that the SSE program is successful in reducing truancy and facilitating a safer environment on school campuses, it does not provide a basis to measure cost effectiveness. To do this, we must find a method of identifying specific measurable economic benefits or in the absence of benefits, costs that will be avoided as a result of the program. The following chapter presents research on cost-avoidance measures for the SRO and SAEP programs.

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IV. LITERATURE REVIEW

A. INTRODUCTION

In the absence of specific local data to measure the economic benefit of the SSE programs², we turned to the body of literature on measuring cost-benefit/cost avoidance. Cost benefit analysis “has been in use by public policy analysts for many years... [and]...has become a routine tool in the development of environmental, health, and safety regulations” (Cohen, 2000, p. 265). In this chapter, we present information to support using an economic model developed by Mark A. Cohen.

B. THE CASE FOR A SOCIETAL VIEW

According to the National Center for Education Statistics (NCES), “schools are responsible for the effective education of their students, and creating an environment in which students and teachers [feel] safe, is an important component of the education process” (U.S. Department of Education, 2003, p. iii). Students who engage in violence or are fearful of violence around them are not able to concentrate on academics and may drop out of school (U.S. Department of Education, 2003, p. 12). In addition to the issues of school violence and crime, truancy has been shown to be a stepping-stone to delinquent and criminal activity. A “report compiled by the Los Angeles County Office of Education on factors contributing to juvenile delinquency concluded that chronic absenteeism is the most powerful predictor of delinquent behavior” (Garry, 1996, p. 1). Furthermore, chronically truant students are “more likely to become drug users and drop out of high school” (Crawford, et al., 2003, p.3). Several studies illustrate the links between truancy and later negative outcomes. For instance, according to the Colorado Foundation for Families and Children, a “longitudinal study conducted in St. Louis over a 30-year period showed that early truancy was clearly related to adult criminality, violence, marital problems and job problems” (Gonzales, Richards & Seeley, 2002, p. 4).

² We identified four categories of costs directly associated with the SRO and SAEP programs. These costs are property damage, medical costs associated with crime, average daily attendance, and truancy costs. However, these costs were short-term in nature and could not be directly linked to the SSE programs. Therefore, we looked to the literature for a more holistic approach.

In a “study of prison inmates conducted in 1996, 89 percent had a history of school truancy” (Gonzales, et al., 2002, p. 4). Additionally, “three grand juries in Dade County, Florida analyzed the data from more than 5,000 of the county’s most serious juvenile offenders and found that excessive truancy was one of the three traits most of these juveniles had in common” (Gonzales, et al., 2002, p. 4). Another study discussed by Gonzales, Richards and Seeley (2002) documented that “between 75 and 85 percent of the serious juvenile offenders had been truant or chronically absent from school in their youth” (p. 4).

There is also a link between school safety and academic accomplishments. According the U.S. Department of Education, the NCES conducted a school survey on crime and safety for the 1999 to 2000 academic year and results indicate a direct correlation between school violence and academic performance (U.S. Department of Education, 2003). NCES indicated that schools reporting a “...lower percentage of students that experienced at least one violent incident during the school year were more likely to attend college than those who experienced a higher number of violent incidents during the same period” (U.S. Department of Education, 2003, p. 14). Furthermore, the results of the survey indicated that not only will students who experience violent incidents on a daily basis be less likely to attend college; but also they may drop out of school and continue delinquent behavior that places a social and monetary strain on society (U.S. Department of Education, 2003).

The point to be made here is that for every child that fails to graduate from high school and move on to become a productive member of the community, there is a cost to society as a whole. In order to evaluate the full benefits of early intervention programs like SAEP or SRO, we need to be able to estimate the avoided costs that would be borne by society over an extended period of time.

In 1998, Mark A. Cohen published an article titled “The Monetary Value of Saving a High-Risk Youth” in which he estimates that preventing a youth from becoming a career criminal, heavy drug user, or high school dropout saves between \$1.7 and \$2.3 million (present value in 1997 dollars) in future costs (Cohen, 1998). Cohen’s analysis focuses on measuring the economic cost of the same behaviors that the SAEP and the

SRO programs strive to prevent in Salinas. He states that school violence prevention programs targeting “high risk youths are designed to prevent high-school dropouts, crime, drug abuse, and other forms of delinquency” (Cohen, 1998, p. 5). As with the SSE programs, Cohen states that, “the benefits [of programs targeted at high-risk youths] are more elusive” (Cohen, 1998, p. 5). This is one of the major reasons “Congress has restricted funding for drug and violence prevention programs in schools to those that can provide positive outcome-evaluation data” (Flannery, 2000). Even though some prevention programs may offer evidence that they reduce crime, drug abuse, and truancy, policy makers appear to question whether the societal benefits of these programs outweigh the costs.

The difficulty in doing a cost-benefit analysis on school violence, drug, and truancy prevention programs is that, even if the programs are successful, there is no direct monetary value available to measure the benefits provided. In order to make an informed choice on whether or not to fund a program, or to choose between two or more competing programs, it would be helpful to be able to compare the alternatives on a quantitative basis. The most direct way is to show that the benefits of a program exceed the costs to administer such a program (Cohen, 2000, p. 5).

With the connection of Cohen’s economic model and the SSE program in mind, we briefly explain the methodology used by Cohen and use the monetary values that are developed in Cohen’s research to analyze and show the cost effectiveness of the SAEP and SRO programs.

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V. COHEN'S METHODOLOGY

A. INTRODUCTION

In the prior chapter we presented relevant information to link Cohen's model with the outcomes purported by the efforts of the SSE programs. With this linkage developed, an explanation of Cohen's methodology is needed to establish a basis for analyzing the SRO and SAEP costs against the benefits of saving a high-risk youth.

As introduced earlier, Cohen's work set forth a framework for measuring the prospective benefits of violence, drug, and truancy intervention programs for juveniles and adolescents. Cohen (1998) provides "preliminary estimates of the *potential* benefits from intervention programs..." and "...the costs imposed by the career criminal, the typical heavy drug abuser, and the high-school dropout" (p. 6). In lieu of specific program data, he asks two questions. First, "what is the monetary value of saving a high-risk youth from a life of crime, drug abuse, or dropping out of high school" (Cohen, 1998, p. 6)? Secondly, "how many [high-risk youths] must be prevented [from a life of crime, drug abuse, or dropping out of high school] before the program 'pays for itself'" (Cohen, 1998, p. 6)? To answer these questions, we present the fundamental aspects of Cohen's framework and use the framework as the foundation for the SSE analysis.

B. COHEN'S MODEL AND THE COSTS OF DELINQUENCY

In short, Cohen's (1998) model estimates the "present discounted value, of the external marginal costs³ a career criminal, heavy drug abuser, and high-school dropout" imposes on society (p. 8). For example, unarmed fights result in external marginal costs associated with medical costs, lost wages, and pain and suffering sustained by the victims. Drug abusers become less productive in the labor force and potentially commit crimes to support their drug dependency. Similarly, high school dropouts are more likely to have lower incomes and be less productive in the workforce, thus society loses out on labor productivity and, perhaps, pays more for social programs. Cohen also addresses

³ External marginal cost is defined as an additional cost imposed upon society over and above a primary cost borne by society of an average citizen.

intangible costs, such as the pain and suffering from being a victim of a violent crime. The example Cohen gives is that certain non-fatal injuries can be “estimated by using jury award analysis for crime victims (Cohen, 1988) and consumer product injuries (Rodgers, 1993)” (1998, p. 8). However, individual losses associated with drug users and incarcerations are excluded from the estimates because they are “private costs borne by the person who consumes the drugs or commits the crime” (Cohen, 1998, p.8).

Cohen also utilized the present value analysis method. A dollar expended today is not the same as a dollar received in the future; therefore, future benefits must be discounted to present value. Cohen used a 2 percent discount rate in his estimates.

The following three sections briefly summarize how Cohen developed the cost of a career criminal, a heavy drug user and a high school dropout.

1. Cost of Career Criminals

Cohen (1998) “estimates the [external] lifetime costs imposed by a career criminal and assumes that the chronic juvenile offender will continue his life of crime as an adult” (p. 9). The calculation is based upon the summation of four different components: a) the mean number of crimes or offenses committed by career criminals, b) the victim costs of crimes committed, c) the criminal justice-related costs, and d) the forgone earnings of career criminals. Each component is briefly explained below.

a. Mean Number of Crimes Committed by Career Criminals

Blumstein (1986) estimated that the “annual rate of committing crime for active offenders ranges from 2 to 4 per year for serious assaults and 5 to 10 per year combined for robbery and property crimes” (1986, p. 66). However, these rates are associated with adult offenders. Youth offenders have a lower estimated number of crimes per year. Blumstein *et al.* (1986) estimates that “crimes for juvenile offenders is from one to four crimes per year from age 14 to age 17” (1986, p. 92).

b. Victim Costs of Crimes Committed

Victim costs are the greatest single component of the total costs of career criminals because they include not only direct costs, loss of property and medical costs,

but also indirect costs, such as pain and suffering costs. According to Miller *et al.* (1996), the estimated cost to society of a murder is estimated at \$3.4 million and the monetary value of the risk of death to a robbery victim is approximately \$6,200. Cohen adjusted these costs to 1997 dollars. Thus, combined with the number of offenses committed, the estimated victim costs incurred per year is \$165,000 (Cohen, 1998, p. 11).

c. *Criminal Justice-Related Costs*

These costs are made up of two variables, estimated costs per offense incurred by the criminal justice system and punishment costs. They are “based on the probability of an offender ending up at each stage of the criminal justice system, multiplied by criminal justice costs for each stage” (Cohen, 1998, p. 11). Thus, Cohen estimates that the “average career criminal annually adds \$40,000 to the cost of the criminal justice system” (Cohen, 1998, p. 11). This figure includes criminal investigations, legal defense, prison or jail, parole and probation costs for different types of crimes.

d. *Forgone Earnings of Career Criminals*

Cohen (1998) estimates the average convicted felon spends eight years in jail or prison (p. 16). This time lost has a potential negative effect on the societal labor force. “The loss in productivity is proxied by loss in earnings to the offender” (Cohen, 1998, p. 16). Cohen (1998) estimates that \$60,000, or \$52,000 in 1997 present value terms, is the total forgone earnings per career criminal (p. 16).

2. *Cost of Heavy Drug Users*

Drug abuse costs affect users, their loved ones, and society as a whole. Drug abuse costs are comprised of eight components: a) the population of heavy drug users, b) the opportunity cost of resources associated with the manufacture and sale of drugs, c) the drug rehabilitation expenses, d) the reduction of productivity, e) the medical costs associated with overdose or other drug-related illnesses, f) the premature death due to drug abuse, g) the additional crime committed by drug users, and h) the criminal justice costs associated with drug use. Each component is briefly explained below:

a. *Population of Heavy Drug Users*

Cohen (1998) estimates that there are approximately 2.5 million Americans who are heavy drug users. He points out that this number may be underreported because heavy drug users are often in “hard-to-reach populations” (Cohen, 1998, p. 18). Using retention rates from aggregate age-specific data on drug use (Harrison and Gfroerer, 1992, p. 432), it is assumed that drug use begins at age 15 and continues through age 60 (Cohen, 1998, p. 19).

b. *Opportunity Cost of Resources Associated with the Manufacture and Sale of Drugs*

In 1997, the average annual retail price paid for drugs was estimated to be \$15,000 for heavy drug users. However, when calculating the opportunity costs, the “street price” of drugs can be considered an overestimate of the “true opportunity cost of resources devoted to drug distribution” (Cohen, 1998, p. 19). Thus, dealers are subject to risk premiums in addition to their opportunity costs. According to Reuter *et al.* (1990), “hourly earnings in legitimate occupations are only 25 percent of earnings from illegal drug dealing in Washington, DC.” Therefore, Cohen (1998) estimates the lifetime opportunity costs to be \$84,000 to \$168,000 or \$63,000 to \$126,000 in present value terms (p. 19).

c. *Drug Rehabilitation Expenses*

According to the U.S. Department of Justice, in 1989, more than \$1.73 billion was spent on drug treatment programs (Cohen, 1998). By dividing this figure by an estimated 5.5 million Americans in need of treatment, the cost is \$314 per drug user in need. The present value of this calculation converted to lifetime total yields a cost of \$10,200 or \$7,900 in present value terms.

d. *Reduced Productivity Due to Decreased Work Ability*

Cohen's (1998) model considers the "reduced wages due to drug use by comparing the reported income of drug users and non-users" (p. 20). The analysis estimated the controls for other factors, such as alcohol abuse and demographic characteristics. According to Cohen (1998), the total lifetime productivity losses are estimated to be \$27,600, or \$17,000 in present value terms.

e. *Medical Costs Associated with Overdose or Other Drug Related Illness*

According to the U.S. Department of Justice, in 1985, approximately \$906 million was spent on illnesses related to illegal drug use. Additionally, \$190 million was spent on health care for drug-related AIDS cases (Cohen, 1998). Cohen assumes that 75 percent of these costs are attributable to heavy-drug users and figures the average cost per year per heavy drug user were \$475 in 1997 dollars. According to Cohen (1998, p. 20), the present value of additional lifetime medical costs to heavy drug users is estimated to be \$11,000, or \$8,600 in present value terms.

f. *Premature Death Due to Drug Abuse*

In 1994, the U.S. Department of Justice reported that over 10,000 deaths that occurred in 1989 were directly attributable to drug use (Cohen, 1998). Based on an estimated 5.5 million Americans in need of treatment, the lifetime risk of death for drug abusers is 3 percent. However, this rate increases for heavy drug users of cocaine and heroin. Thus, Cohen estimates a range of 3 to 14 percent for the death rate. Cohen (1998) states that only "the tangible costs such as lost productivity and medical expenses are included as an external cost of premature death due to drug abuse" (p. 21). Based on the estimated range, the "future risk for death for a drug abuser ranges from \$47,700 to \$223,000" (Cohen, 1998, p. 21) or from \$37,000 to \$173,000 in present value terms.

g. *Additional Crime Committed by Drug Users*

Cohen (1998) combines the cost of crime to victims and the criminal justice costs, to get the average annual cost of drug-related crime in this population of

drug users, which ranges from \$13,000 to \$36,000 (Cohen, 1998). He then combines the estimated drug-related homicides and drug-related crimes, and multiplies by the drug abuse retention rate. Thus, the estimated range for the total lifetime cost of drug-related crime and homicides for the average heavy drug user is from \$283,000 to \$781,000, or \$220,000 to \$606,000 in present value terms.

h. Criminal Justice Costs Associated with Drug Use

In 1992, Cohen (1998) reports that there were 1,066,400 arrests for drug related crimes. He also estimates that 109,426 persons were convicted in state courts for felony drug possession, which is about 10 percent of those arrested for drug related crimes. Thus, using the same methodology for criminal behavior presented in the previous section, Cohen (1998) estimates the average criminal justice system cost of a heavy drug user is approximately \$40,500 over a drug usage career or \$29,700 in present value terms.

3. Cost of High-School Dropouts

The Cohen calculation is an attempt to determine the total lifetime costs of a youth who leaves school early instead of at age eighteen and then retires at age sixty-five. The calculation is based upon the summation of three different components that give the present value of a youth dropping out of high school. The three components are: a) lost wages and productivity, b) fringe benefits, and c) value of non-market private and public benefits. Each component is briefly explained below.

a. Lost Wages and Productivity

The major benefits that are quantifiable for attaining a high school diploma are the ability to earn higher wages and an increased productivity level for society in the work force. Cohen (1998) estimated the total lifetime wage differential between the “mean monthly earnings by age for high-school versus non-high-school graduates to be \$400,000 in 1997 dollars” (p. 25). However, he indicates that the gross differences in earnings for both the average graduate and the average non-graduate are

different. Thus, he adjusts this figure by 25 percent due to the differences and calculates the estimated lifetime differential to be \$300,000, or \$155,000 in present value terms.

b. Fringe Benefits

According to the U.S. Chamber of Commerce (1990), it is estimated that the monetary value of fringe benefits is 25 percent. By taking 25 percent of \$300,000, Cohen (1998) estimated the lost fringe benefits to be \$75,000.

c. Value of Non-market Private and Public Benefits

Besides an increase in productivity, an educated population might add social benefits like technological and industrial improvements (Cohen, 1998). However, these other benefits are difficult to capture in a dollar amount. Thus, in lieu of solid data, Cohen (1998) assumes the “non market value of education ranges from 25 to 100 percent of the market value: \$95,000 to \$375,000” (p. 26).

The table below summarizes the estimated totaled costs previously discussed. Cohen’s estimate for the total cost of a career criminal ranges from \$1.5 to \$1.8 million or from \$1.3 to \$1.5 million in present value 1997 dollars. The total cost of a heavy drug user ranges from \$483,000 to \$1.26 million with a 1997 present value range from \$370,000 to \$970,000. Finally, the total cost of a youth dropping out of high school ranges from \$469,000 to \$750,000 or from \$243,000 to \$388,000 in present value 1997 dollars. Less the estimated value of duplication of crimes, the total cost ranges from \$2.2 to \$3.0 million or from \$1.7 to \$2.3 million in present value 1997 dollars. These numbers are order-of-magnitude estimates.

Summary of the Monetary Value of Saving a High-Risk Youth		
	Total Costs	1997 Present Value
Career Criminal	\$1.5 - \$1.8M	\$1.3 - \$1.5M
Heavy Drug User	\$483K-1.26M	\$370K - \$970K
High-School Dropout	\$469K - \$750K	\$243K - \$388K
Less Duplication: (crimes committed by heavy drug users)	(\$283K - \$781K)	(\$220K - \$606K)
Total	\$2.2M - \$3.0M	\$1.7M - \$2.3M

Table 5: (Source: Cohen - Monetary Value of Saving a High Risk Youth, 1998.)

At this point, we are ready to use Cohen's framework and to draw conclusions about the relative value of the SSE programs. Chapter VI provides this analysis and a summary of our conclusions.

VI. SSE PROGRAMS ANALYSIS AND CONCLUSION

A. INTRODUCTION

In order to use Cohen's framework to analyze current costs, we must first bring his estimates to 2003 dollars and then we can analyze the SRO and the SAEP programs and give concluding remarks.

Table 6 shows Cohen's estimates in 2003 dollars. Throughout this analysis, we present findings using the most conservative (i.e., lower) end of Cohen's range.

Summary of the Monetary Value of Saving a High-Risk Youth	
	2003 Present Value
Career Criminal	\$1.5M – \$1.7M
Heavy Drug User	\$424K – \$1.1M
High-School Dropout	\$278K – \$444K
Less Duplication: (Crimes Committed By Heavy Drug Users)	(\$252K – \$694K)
Total	\$1.95M – \$2.64M

Table 6: (Source: Cohen - The Monetary Value of Saving a High Risk Youth, 1998.)

The value of saving one high-risk youth as estimated by Cohen is substantial. If a youth drops out of school, becomes a habitual drug user and becomes a career criminal, the cost can range from roughly \$2.0 million, on the low end, to \$2.6 million on the high end. Depending on the number of youths affected, it appears as if the return on investment of the SRO and SAEP programs would be exceptionally high. However, this is an incremental analysis that involves costs on the margin. These programs incur a cost to society that is in addition to the cost of the educational system that the society is already paying. If the intent in presenting this data is to convince administrators to fund these programs, it might be difficult to justify accruing the benefits solely to the SRO and SAEP programs while discounting the contribution of the educational system. It would be inappropriate to try and predict an actual dollar savings or return ratio with the "order-of-magnitude" type estimates generated by Cohen. A more appropriate method to describe the benefits of the programs is to present them as a function of how many youths need to be saved to justify the costs of the SSE programs.

B. SRO PROGRAM ANALYSIS

In order to measure the cost-effectiveness of the SRO program, one must take into consideration that the program is long term. The program would have little effect on individual students if they were to have an SRO present one year, but not the next. The SRO program places officers in middle and high schools campuses encompassing the seventh through twelfth grades. In our analysis, we assume that the program will be in effect for six years, a typical high-risk youth's entire middle and high school educational period.

SRO Program Minimum Required Results	
Present Value Cost of Program over six years (six years would be the length of exposure to the program)	\$5M
Estimated Cost Avoidance per "Career Criminal" (Discounted to Present Value)	\$1.5M
Minimum number of "Career Criminals" successes needed over six years to pay for the SRO program	3.33
Estimated Cost Avoidance per "Heavy Drug User" (Discounted to Present Value)	\$424K
Minimum number of "Heavy Drug User" successes needed over six years to pay for the SRO program	11.80

Table 7: (Source: author)

Table 7 shows five items: 1) the present value cost of the program over six years, 2) the minimum estimated cost avoidance per career criminal, 3) the minimum number of career criminal successes needed over six years, 4) the minimum estimated cost avoidance per heavy drug user, and 5) the minimum number of heavy drug user successes needed over six years. All estimates are adjusted to 2003 dollars and do not include the duplication of costs, such as the cost of crime committed by heavy drug users. By taking the six-year sustainment estimate of the SRO program in 2003 dollars and comparing it to the costs of both career criminals and heavy drug users, we get an estimate of the number

of youths that need to be saved in order for the program to be cost effective for the taxpayer.

The present value of the estimated six-year SRO sustainment budget for eight officers is approximately \$5 million, using the low end of Cohen's range the present value cost of a career criminal is \$1.5 million and the present value of heavy drug users is \$423,826. By dividing the six-year sustainment budget by Cohen's estimates, the number of students that need to be saved over a six-year period in order for the SRO program to pay for itself is either 3.33 career criminals or 11.80 heavy drug users.

C. SAEP PROGRAM ANALYSIS

Unlike the SRO program, the SAEP program is focused on elementary and middle school students vice high school students. For the purpose of this analysis, we assume that all benefits derived from a reduction in truancy rates are the result of the SAEP.

According to SAEP program director, truancy is not just a problem concerning youths skipping school. The families of the youth and their perceived value of education affect truancy rates. Many of the families involved in the SAEP program are in a lower income bracket and are employed as agricultural workers. Their first language is not English, but Spanish. The children may feel uncomfortable at school because of the language barrier. Also, the parents may be keeping children at home to assist with caring for their younger siblings or taking care of other responsibilities while the parents work in the fields (Shields, 2003). The reasons for truancy vary widely and the probation officers need many different types of approaches. As such, the amount of time that a child spends in the SAEP program is somewhat indeterminate.

For the purpose of our analysis, and consistency, we will make the same assumption for the SAEP that we made for the SRO program, in that we must take into consideration that the program is long term. Even though the youths may not be active participants for an extended period of time, the fact remains that the probation officers are on the job and continually monitoring their progress, which will lead to the long-term benefits that Cohen suggested. We assume that the youths receive the most benefit from

the third to eighth grade and use the same six-year, present value analysis that we used to analyze the SRO program. Table 8 below summarizes the SAEP analysis.

SAEP Program Minimum Required Results	
Present Value Cost of Program over six years (six years would be the length of exposure to the program)	\$1.2M
Estimated Cost Savings per "High School Dropout" saved (Discounted to Present Value)	\$278K
Minimum number of "High School Dropout" successes needed over six years to pay for the SAEP program	4.32

Table 8: (Source: author)

Using the low end of Cohen's estimate of \$278,000 in 2003 dollars and using the estimated present value cost of the SAEP program for six years of \$1.2 million from the sustainment budget, we estimate that 4.32 youths would have to be prevented from dropping out of school over six years to pay for the SAEP program. This number does not consider the potential additional costs of crime, drug abuse, and other delinquencies associated with dropping out of school. Rather, they are only an estimate of lost benefits to society from having a less educated and productive citizen as a result of dropping out of school.

D. CONCLUSION

If the SSE programs can influence enough youths to prevent them from falling into a life of crime, heavy drug use, or dropping out of school, then the programs will pay for themselves. For the SRO program to cover its six-year sustainment cost of \$5 million it has to either prevent 3.33 youths from becoming career criminals, prevent 11.80 youths from becoming heavy drug users, or prevent some combination of the two over the same period. The SAEP program has to prevent 4.32 youths from dropping out of high school over six years to pay for the \$1.2 million sustainment cost. Ultimately, the question becomes how likely is it that the SRO and the SAEP staff will be able to influence the target numbers of youths in order to cover the costs of the program? Based

on our research and our conversations with program staff, we believe these target numbers of youths are achievable. The following paragraphs provide discussion to support our conclusion.

The officers who participated in the SRO program were surveyed for their expert opinions on the likelihood of specific outcomes and percentages concerning high-risk youth. The results of the survey indicated that between 3 and 5 percent of the student population, for both middle and high schools, become involved in school crime. In this case, school crime is characterized as fighting, using illegal drugs and theft on school grounds. The student population, based on enrollment figures for academic year 02/03, was 13,295 students for both the four middle and four high schools involved in the program (California Department of Education, Dataquest, 2003). Thus, the range of students involved in crime, based on the SRO survey, is between 400 and 665 students. Survey results also indicated that approximately 80 percent of the students who get into trouble will re-enter school without any significant problems. This implies that of the students involved in school crime, 320 to 532 will continue school without major encounters with the law. Of the 20 percent of students who continue to exhibit delinquent behavior, SROs estimate that 10 percent will end up as drug users and between 25 and 40 percent will end up as career criminals. Therefore, we estimate that target group of high-risk youth that can most benefit from the SRO program is comprised of between 28 and 67 individuals during any given school year. As previously mentioned, the SRO program will pay for itself by diverting either 11.80 youths from becoming heavy-drug users, 3.33 youths from becoming career criminals, or some combination there of. Using the low end of the target group range, 28 youths, we can infer that the SRO program would have to successfully impact between 42.9 and 12.2 percent of the high-risk youths.

With regard to the SAEP program, there is little data available on the individual youth outcomes for SAEP intervention. The participants were not tracked after their participation in the program ended. Since the youths involved in the program were elementary and middle school students, it is too early to determine which, if any, will dropout or continue on to graduate from high school.

The project team surveyed the SAEP probation officers in November 2003. The probation officers indicated that the number of youths who started attending school regularly after exposure to the program at 10 to 90 percent. However, none of the officers surveyed were able to estimate how many of their clients would eventually continue on to graduate. During the time frame of the SS/HS grant, academic year 00/03, the SAEP mediated 683 youth. Using the 10 to 90 percent estimate provided by the survey, we can assume that between 68 and 614 youths were able to continue their education without being chronically truant; and thus, averted dropping out of school. Even at the low end of this estimate, 68 students, the number of students saved is far above the minimum required 4.32 students.

For both programs in the SSE element, we have taken a conservative approach in trying to determine the number of high-risk youths that need to be saved to economically justify the SRO and SAEP programs. First, we used the lower end of Cohen's estimates to calculate the number of high-risk youth that need to be saved. Second, we analyzed the programs separately and excluded any potential benefit from one program to the other. Any potential benefit from the SAEP effort was excluded from the SRO program and vice versa. If we could determine the cross program effects and include those effects in our analysis, the likelihood of meeting the minimum required numbers to cover the costs of the programs would be increased. In conclusion, we believe the SSE element is cost effective and provides a significant return on investment for the taxpayer and warrant further federal funding.

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